WHAT IS CLAIMED IS:

1. A method for measuring angular speed of an object, the method comprising:

providing a micromechanical filter apparatus including one or more intercoupled micromechanical elements including a first resonator having a first resonance frequency formed on a substrate and having a drive mode response in a drive mode wherein the filter apparatus has a filter response in a sense mode;

coupling the substrate to the object so that the filter apparatus rotates with the object about a first axis;

driving the first resonator in the drive mode so that the first resonator vibrates along a second axis at a reference vibration and generates a Coriolis force which causes one of the other elements of the filter apparatus to vibrate along a third axis at an induced vibration; and

sensing the induced vibration in the sense mode to obtain a corresponding output signal which represents the angular speed of the object about the first axis.

2. The method as claimed in claim 1 wherein the micromechanical elements include a second resonator having a second resonance frequency wherein the resonance frequencies are substantially the same in the drive and sense modes.

3. The method as claimed in claim 2 wherein the filter response in the sense mode has a substantially constant amplitude region for a passband of frequencies including the resonance frequencies and wherein the filter response of the filter apparatus in the sense mode is substantially constant about the resonance frequencies.

4. The method as claimed in claim 1 wherein the micromechanical elements include second resonator coupled to the first resonator and wherein the first resonator is driven during the step of driving in the drive mode so that the first resonator vibrates along the second axis at the reference vibration

and generates the Coriolis force to cause the second resonator to vibrate along the third axis at the induced vibration.

5. The method as claimed in claim 4 wherein the resonators are platform resonators.

6. The method as claimed in claim 1 wherein the first resonator is comb-driven.

7. The method as claimed in claim 1 wherein the step of sensing is performed capacitively.

8. The method as claimed in claim 1 wherein Q-multiplication is attained in both the drive and sense modes.

9. The method as claimed in claim 4 wherein the resonators are polysilicon resonators.

10. The method as claimed in claim 4 wherein the micromechanical elements include a mechanical spring for coupling the resonators together.

11. The method as claimed in claim 1 wherein the filter apparatus is a wide passband filter apparatus and wherein the filter response is a wide passband filter response.

12. A system for measuring angular speed of an object, the system comprising:

a substrate;

a micromechanical filter apparatus including one or more intercoupled micromechanical elements including a first resonator having a first resonance frequency formed on the substrate and having a drive mode response in a drive mode wherein the filter apparatus has a filter response in a sense mode and

wherein the filter apparatus rotates with the object about a first axis when the substrate is coupled to the object and the object is rotated;

means for driving the first resonator in the drive mode so that the first resonator vibrates along a second axis at a reference vibration and generates a Coriolis force which causes one of the other elements of the filter apparatus to vibrate along a third axis at an induced vibration; and

means for sensing the induced vibration in the sense mode to obtain a corresponding output signal which represents the angular speed of the object about the first axis.

13. The system as claimed in claim 12 wherein the micromechanical elements include a second resonator having a second resonance frequency wherein the resonance frequencies are substantially the same in the drive and sense modes.

14. The system as claimed in claim 13 wherein the filter response in the sense mode has a substantially constant amplitude region for a passband of frequencies including the resonance frequencies and wherein the filter response of the filter apparatus in the sense mode is substantially constant about the resonance frequencies.

15. The system as claimed in claim 12 wherein the micromechanical elements include second resonator coupled to the first resonator and wherein the first resonator is driven by the means for driving in the drive mode so that the first resonator vibrates along the second axis at the reference vibration and generates the Coriolis force to cause the second resonator to vibrate along the third axis at the induced vibration.

16. The system as claimed in claim 15 wherein the resonators are platform resonators.

17. The system as claimed in claim 12 wherein the first resonator is comb-driven.

18. The system as claimed in claim 12 wherein the means for sensing includes a capacitor for capacitively sensing the induced vibration.

19. The system as claimed in claim 12 wherein Q-multiplication is attained in both the drive and sense modes.

20. The system as claimed in claim 15 wherein the resonators are polysilicon resonators.

21. The system as claimed in claim 15 wherein the micromechanical elements include a mechanical spring for coupling the resonators together.

22. The system as claimed in claim 12 wherein the filter apparatus is a wide passband filter apparatus and wherein the filter response is a wide passband filter response.

23. The method as claimed in claim 4 wherein the resonators are disk resonators.

24. The method as claimed in claim 4 wherein the resonators are wineglass resonators.

25. The system as claimed in claim 15 wherein the resonators are disk resonators.

26. The system as claimed in claim 15 wherein the resonators are wineglass resonators.